

MAGELONIDAE FROM THE MEXICAN PACIFIC AND NORTHERN GULF OF MEXICO, WITH THE DESCRIPTION OF A NEW GENUS (*MEREDITHIA*) AND FOUR NEW SPECIES

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ABSTRACT

We analyzed 556 specimens from the family Magelonidae collected during surveys made along the continental shelf of the Pacific coasts of Mexico (Gulf of California, Gulf of Tehuantepec, and the state of Guerrero). The study area covers latitudes 15°35'N to 31°20'N and longitudes 94°00'W to 114°23'W. Additional material from the northern Gulf of Mexico (USA region) belonging to the USNM collections was also examined. Earlier records of magelonids in the Mexican Pacific include *Magelona pacifica*, *M. pitelkai*, *M. sacculata*, and *M. californica*. A new genus (*Meredithia*), characterized by the presence of acicular spines in abdominal parapodia, as well as four new magelonid species are described. Affinities to related species in both genera (*Magelona* and *Meredithia*) are discussed. *Magelona marianae* is the only species in the genus with bidentate hooded hooks and notopodial lateral lamellae distally crenulate. In *Magelona tehuanensis*, the tip of the prostomium is crenulate with frontal horns, dorsal medial lobes and tridentate abdominal hooks. *Meredithia spinifera* is characterized by the presence of large hooded recurved spines in some abdominal anterior setigers (10–17); in *Meredithia uebelackerae* large hooded recurved spines are present in notopodia from setiger 36. A key is provided for species found in the Mexican Pacific.

The family Magelonidae had been represented up to now, by only one genus: *Magelona* Müller, 1858, and more than 50 described species (Blake, 1996). These organisms are characterized by a body divided into two regions: the anterior one which includes the prostomium, peristomium and setigers 1–9; and the abdominal part with a variable number of segments. The prostomium, with a typical spatulate form, facilitates mobility in the sediment. Thoracic setae are usually limbate although in some species modified setae with a bilimbate distal expansion can be present in setiger 9. Abdominal setae are uni-, bi-, tri-, or multi-dentate hooded hooks.

Magelonids were observed, which can be differentiated from *Magelona* by the presence of large hooded acicular spines in some abdominal setigers, which is a unique morphological character previously unknown in this family. A new genus (*Meredithia*) is proposed to include this unique magelonid.

Relevant studies or revisions about magelonids have been made by Wilson (1958, 1959), Jones (1963, 1971, 1977, 1978) and Uebelacker and Jones (1984). Jones studies in particular established the taxonomic criteria to differentiate the species in this family which were followed in this study.

In the Mexican Pacific waters, four species of magelonids have previously been recorded: *Magelona pacifica* Monro, 1933, *M. pitelkai* Hartman, 1944a, *M. sacculata* Hartman 1961 and *M. californica* Hartman, 1944b, the latter also recorded from deep waters. These records come from general surveys of polychaetes from the Mexican Pacific, since specific studies on Magelonidae have not been carried out in this region.

We agree with Uebelacker and Jones's (1984) and Nateewathana and Hylleberg's (1991) comments that there is probably a large number of species still undescribed in this family.

METHODS

The 556 specimens were collected on board the Mexican OV EL PUMA from the continental shelf of the Gulf of California and the Gulf of Tehuantepec during the cruises CORTES 2 (March 1985), CORTES 3 (August–September 1985), and MIMAR 3 (May–June 1987), with a Smith-McIntyre grab (0.1 m²). The specimens from beaches of Petacalco Bay, Guerrero (December 1992–April 1994) were collected intertidally. Additional material was examined from the northern coasts of the Gulf of Mexico, loaned from the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM) collection.

The holotypes and some paratypes are deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM). Additional paratypes are deposited in the Natural History Museum of Los Angeles County (LACM), the Australian Museum (AM), the British Natural History Museum (BNHM), and the Instituto de Ciencias del Mar y Limnología, UNAM (CP-ICMyL) where the other identified species are also deposited.

Descriptions are based on holotypes unless specified otherwise. The habitat data for each species are abbreviated as follows: D= depth in meters, T = temperature in °C, S = salinity in ‰, OM= organic matter content in the sediments in ‰, and DO = dissolved oxygen in ml L⁻¹.

SYSTEMATICS

Magelonidae Cunningham and Ramage, 1888

Magelona Müller, 1858

Magelona.—Müller, 1858: 215–216.

Type Species.—*Magelona papillicornis* Müller, 1858, by monotypy.

Diagnosis.—Body long, slender, tapered posteriorly, divided into thorax (setigers 1–9) and abdomen (many setigers). Prostomium large, spatulate; anterior margin smooth or crenulate, rounded or protruding laterally as two frontal horns. Palps paired, long, papillate, arising ventrolaterally from base of prostomium. Parapodia biramous, bearing various combinations of median lobes and lateral lamellae. Thoracic setae limbate or capillary, often modified on setiger 9. Abdominal setae are hooded hooks. One pair of pigdial cirri present.

Magelona californica Hartman, 1944b

Magelona californica Hartman, 1944b: 320–321, pl. 28, figs. 10–14; Hartman, 1969: 191, figs. 1–5; Reish, 1968: 84.; Fauchald, 1972: 200; Kudenov, 1980: 110; Kitamori, 1967: 51–52, fig. 3.

Material Examined.—251 incomplete spec. (Table 1).

Description.—Specimens with 18 to 40 setigers, length 4.25 to 17.0 mm, width 0.25 to 0.5 mm. Prostomium spatulate, rounded in front, with paired triangular raised areas. No eyes. Palps long, papillate, inserted ventro-laterally. Parapodia inconspicuous, with lateral lamellae foliaceous in both rami, those in thorax as large as, or somewhat larger, than those in abdomen. No dorsal or ventral medial lobes. Ninth parapodium with slender pointed setae in both rami. Lateral pouches absent. Abdominal parapodia with transverse rows of hooded hooks; each hook distally bidentate, the secondary tooth thick and larger than in other close species.

Table 1. *Magelona californica*. Material examined.

Number of specimens	Cruise	Locality	Station	Latitude (N)	Longitude (W)	Depth (m)	Sediment	Date
2	CORTES 2	San Miguel Cape	19	28° 10'	112° 48'	30.4	coarse sand	13 March 1985
3	CORTES 2	Banco Gorda	55	23° 09'	109° 28'	32.5	fine sand	21 March 1985
1	CORTES 3	Northern Tiburón Island	27	29° 29'	112° 27'	34.4	fine sand	2 August 1985
1	CORTES 3	Punta San Marcial	10	25° 28'	111° 07'	28.4	fine sand	30 July 1985
1	CORTES 3	Santa María Bay	4	25° 00'	108° 42'	54.9	silty sand	9 August 1985
1	MIMAR 3	Blanca Lagoon	222	15° 53'	095° 30'	94.0	sandy mud	1 June 1987
2	MIMAR 3	Salina Cruz	202	16° 07'	095° 11'	20.0	sandy mud	31 May 1987
1	MIMAR 3	San Francisco	177	16° 06'	095° 50'	40.0	muddy sand	31 May 1987
15		Petacalco Bay		17° 58'	102° 04'	3.0		December 1992 – April 1994
122		Petacalco Bay		17° 58'	102° 04'	7.0		December 1992 – April 1994
85		Petacalco Bay		17° 57'	102° 03'	11.0		December 1992 – April 1994
5		Petacalco Bay		17° 57'	102° 06'	19.0		December 1992 – April 1994
12		Petacalco Bay		17° 57'	102° 06'	23.0		December 1992 – April 1994

Habitat.—Intertidal areas, in muddy sediments (Hartman, 1969), to deep waters (Hartman, 1944b). Gulf of Tehuantepec, from sandy muds to muddy sands; D = 20–94; T = 20–30; S = 34.64; OM = 0.28–2.01. Gulf of California, in fine, medium and coarse and silty sands; D = 28.4–54.9; T = 21.3–26.6; S = 34.45–35.59; OM = 1.8–5.3; OD = 3.58–5.20.

Distribution.—Southern California, in partially enclosed bays (Hartman, 1969). Japan (Kitamori, 1967). Widely recorded in the Mexican Pacific: deep waters near the Marías Islands, Nayarit (Hartman, 1944b; Fauchald, 1972); continental shelf of Punta Mita, Nayarit (Lezcano-Bustamante, 1989), Bahía de Los Angeles (Reish, 1968) and Todos los Santos Bay (Pamplona-Salazar, 1977), both in Baja California Sur, Baja California shores (Sarti-Martínez, 1984). Sonora (Kudenov, 1980), Mazatlán Bay, Sinaloa (Padilla-Galicia, 1984). In this study the species was collected north of Santa Rosalía, Del Carmen Island, Los Cabos, Baja California Sur; north of Tiburón Island, Sonora and Santa María Bay, Sinaloa; Petacalco Bay, Guerrero; Gulf of Tehuantepec in Blanca Lagoon and Mar Muerto Lagoon.

Magelona pacifica Monro, 1933

Magelona pacifica Monro, 1933: 1048–1049, fig. 2; Hartman, 1944b: 320; Hartman, 1969: 193, figs. 1–5.

Material Examined.—100 incomplete spec. (Table 2).

Description.—Specimens with 13 to 36 setigers, length 6.0 to 26.0 mm, width 0.5 mm. Prostomium large, spatulate, frontal margin with lateral horns, continuous with a raised keel on the prostomium forming long, triangular areas, bordered on either side by transverse ridges. Palps long, papillose. Parapodia with broad, foliaceous lobes. Dorsal and ventral medial lobes, ventral medial lobe slightly larger diminishing in size towards posterior end. Notopodial lateral lamellae are broad, foliaceous, increasing in size up to ninth segment. Ninth parapodium with similar, though smaller, lateral lamella and smaller medial lobes, with limbate setae. Lateral pouches absent. Abdominal parapodia with noto- and neuropodial lateral lamellae foliaceous, fascicles of hooded hooks with bifid tip and rounded hood.

Habitat.—Intertidal areas to abyssal basins (Hartman, 1944b, 1969). Gulf of Tehuantepec, in sandy substrates or sands with gravel; muddy sands and muds; D = 20–209; T = 18–30; S = 34.64; OM = 0.11–3.15. Gulf of California, silty sands; D = 28.6; T = 16.8; S = 34.70–35.19; OM = 3.6–3.8; OD = 5.20–5.40.

Distribution.—Panama (Monro, 1933), Southern California (Hartman, 1944b, 1969). Mexican Pacific in front of Baja California Sur (De León-González, 1994), Sinaloa (Arias-González, 1984, Padilla-Galicia, 1984) and Jalisco (Varela-Hernández, 1993). Gulf of California, south of Concepción River, Sonora; northern Sinaloa; Punta Mita, Nayarit; Petacalco Bay, Guerrero; practically all along the continental shelf in the Gulf of Tehuantepec.

Table 2. *Magelona pacifica*. Material examined.

Number of specimens	Cruise	Locality	Station	Latitude (N)	Longitude (W)	Depth (m)	Sediment	Date
6	CORTES 2	Fuerte River	52	25° 40'	109° 29'	28.6	silty sand	20 March 1985
1	CORTES 3	Cabo Tepoca	44	30° 00'	113° 00'	106.0	silty sand	5 August 1985
5	CORTES 3	Fuerte River	52	25° 44'	109° 29'	22.1	fine sand	8 August 1985
1	CORTES 3	Punta San Marcial	10	25° 58'	111° 07'	28.4	fine sand	30 July 1985
4	CORTES 3	Santa María Bay	3	25° 02'	108° 31'	23.5	fine sand	9 August 1985
1	CORTES 3	Punta Mita	61	20° 54'	105° 27'	42.2	fine and medium sand	28 July 1985
1	MIMAR 3	La Cruz	241	15° 48'	095° 55'	76.0	sandy mud	1 June 1987
9	MIMAR 3	Blanca Lagoon	223	15° 56'	095° 30'	78.0	sandy mud	1 June 1987
3	MIMAR 3	Blanca Lagoon	222	15° 53'	095° 30'	94.0	sandy mud	1 June 1987
3	MIMAR 3	Western Salina Cruz	212	15° 57'	095° 20'	70.0	mud	1 June 1987
4	MIMAR 3	Salina Cruz	202	16° 07'	095° 11'	20.0	sandy mud	31 May 1987
10	MIMAR 3	San Mateo del Mar	188	15° 59'	095° 00'	72.0	sandy mud	31 May 1987
10	MIMAR 3	San Mateo del Mar	187	15° 58'	095° 00'	97.0	mud	31 May 1987
3	MIMAR 3	San Francisco	177	16° 06'	094° 50'	40.0	muddy sand	31 May 1987
1	MIMAR 3	Inferior Lagoon	166	16° 09'	094° 40'	23.0	sand	30 May 1987
1	MIMAR 3	Inferior Lagoon	165	16° 04'	094° 40'	40.0	sand	30 May 1987
1	MIMAR 3	Inferior Lagoon	164	15° 56'	094° 40'	70.0	sand	30 May 1987
1	MIMAR 3	Cerritos	148	15° 45'	094° 25'	209.0	mud	30 May 1987
1	MIMAR 3	Mar Muerto Lagoon	141	15° 57'	094° 20'	40.0	coarse sand	30 May 1987
1	MIMAR 3	Puerto Arista	116	15° 35'	094° 00'	72.0	sand	29 May 1987
3		Petalcalco Bay		17° 58'	102° 05'	4.0		December 1992 – April 1994
16		Petalcalco Bay		17° 57'	102° 04'	7.0		December 1992 – April 1994
11		Petalcalco Bay		17° 58'	102° 04'	11.0		December 1992 – April 1994
2		Petalcalco Bay		17° 54'	102° 06'	17.0		December 1992 – April 1994
1		Petalcalco Bay		17° 56'	102° 06'	19.0		December 1992 – April 1994

Magelona pitelkai Hartman, 1944a

Magelona pitelkai Hartman, 1944a: 260–261, pl. 19, figs. 1–9; Hartman, 1944b: 320; Hartman, 1966: 403; Hartman, 1969: 195, figs. 1–7; Kitamori, 1967: 52, figs. 4a–e; Jones 1978: 337–344, figs. 1–25.

Material Examined.—27 incomplete spec. (Table 3).

Description.—Prostomium large, flat, spatulate, broader than anterior segments, rounded frontal margin; on its dorsal surface double longitudinal ridges medially; no horns present at anterior margin; no eyes. Paired palps long, papillated. Elongate, dorsal and ventral medial lobes and a single, larger, triangular notopodial lateral lamella in anterior parapodia; their setae long, slender. Ninth parapodium modified with wide noto and neuropodial lateral lamellae, dorsal and ventral medial lobes slender; setal fascicles wide, external setae slenderer and longer, with narrow wings; setae from median region shorter and with subdistally expanded wing, weakly crenulate margin and attenuate tip. Lateral pouches absent. Abdominal parapodia with broad, foliaceous lateral lamellae, and dorsal and ventral medial lobes. Hooded hooks distally tridentate in spreading fascicles, but of two types: the larger, more numerous type is a typical magelonid hook; the second type is much smaller than the first.

Habitat.—Low intertidal zones, muddy and sandy flats (Hartman, 1944a), shelf depths (Hartman, 1969). Gulf of Tehuantepec in sandy muds; D = 150; T = 17; OM = 2.3.

Distribution.—Tomales Bay, California (Hartman, 1944a), south of San Pedro, California (Hartman, 1969). Japan (Kitamori, 1967). Petacalco Bay, Guerrero; off Barra de San Francisco, Gulf of Tehuantepec.

Magelona marianae new species
(Fig. 1A–G)

Type Material.—Punta Mita 20°54'N, 108°31'W, sta. 61, 23.5 m, fine and medium sands, 28 July 1985 (Cruise CORTES 3), Holotype (USNM: 186401). Paratypes: 25 incomplete spec., all material collected from Punta Mita 20°54'N, 105°28'W, sta. 61, 46.4 m, silty sand, 23 March 1985 (Cruise CORTES 2): 5 spec. (USNM: 186402); 5 spec. (LACM-AHF POLY 1931); 5 spec. (BNHM: 1999-1725-1729); 5 spec. (AM: W25547); 5 spec. (CP-ICMyL: POP-10-001).

Additional Material Examined.—51 incomplete spec. (Table 4).

Description.—Holotype with 46 setigers, length 16.24 mm, width 0.55 mm. Prostomium large, as long as wide (0.67×0.63), anterior margin smooth, well developed frontal horns (Fig. 1A). Four rows of papillae on palps, well separated from each other. Thorax 3.25 mm long, first 7 setigers all similar (Figs. 1A–C), with small and digitiform dorsal medial lobe, notopodial lateral lamellae (postsetal part) foliaceous, with distal margin crenulate, similar in size in all setigers; neuropodial lateral lamellae absent, ventral neuropodial lobe digitiform. Eighth setiger similar to previous ones, but with ventral neuropodial lobes wider basally (Fig. 1D). Setiger 9 with notopodial lateral lamellae long, basally wide and triangular distally; neuropodial lobes wide and rounded, ventral medial lobes digitiform (Fig. 1E). All setae limbate. Abdomen with lateral brown spots between abdominal parapodia. Parapodia with notopodial and neuropodial lateral lamellae folia-

Table 3. *Magelona piteikai*. Material examined.

Number of specimens	Cruise	Locality	Station	Latitude (N)	Longitude (W)	Depth (m)	Sediment	Date
1	MIMAR 3	Barra de San Francisco	171	15° 56'	094° 45'	150.0	sandy mud	31 May 1987
2		Petacalco Bay		17° 58'	102° 06'	3.0		December 1992 – April 1994
15		Petacalco Bay		17° 58'	102° 03'	7.0		December 1992 – April 1994
9		Petacalco Bay		17° 57'	102° 04'	11.0		December 1992 – April 1994

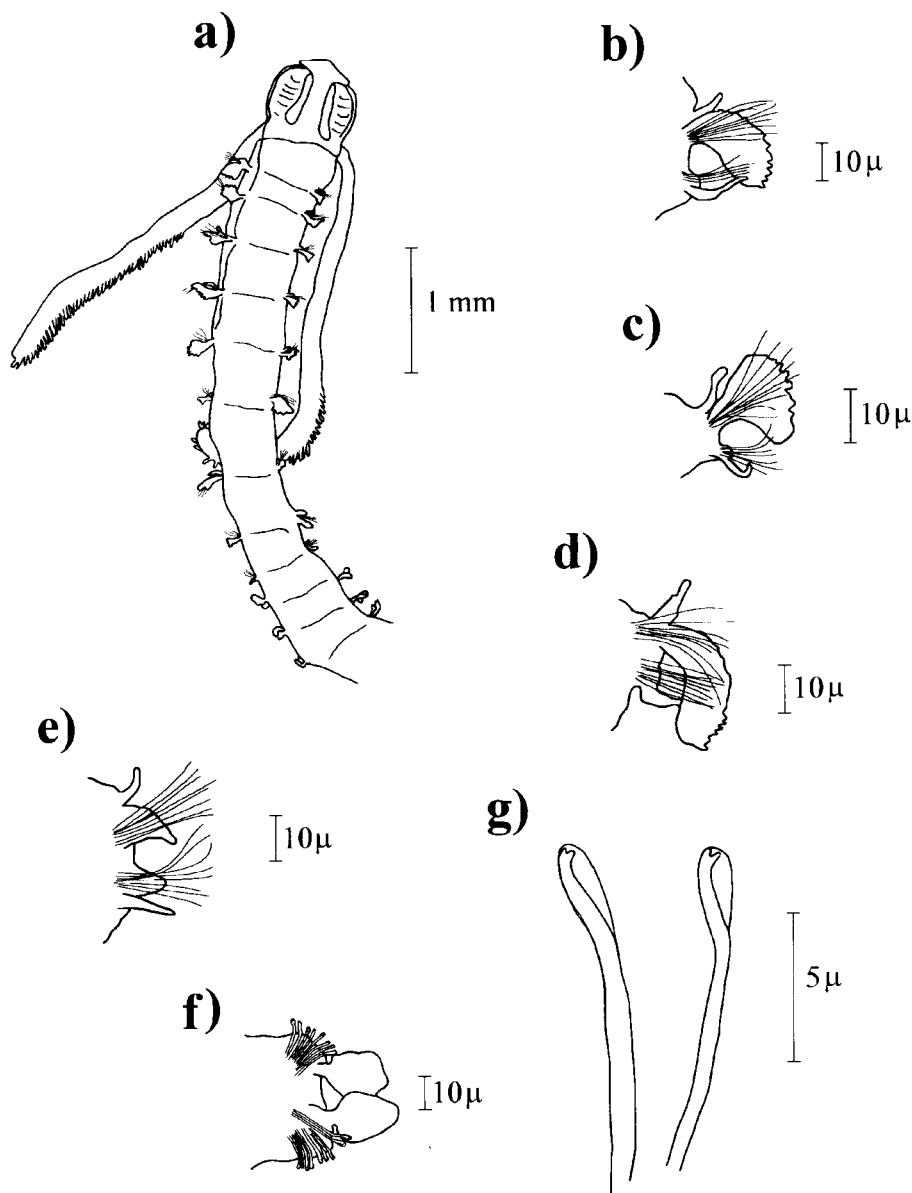


Figure 1. *Magelona marianae* n. sp.: a) anterior end, dorsal view; b, c, d, e, f) setigers 1; 4, 8, 9, 12, anterior view; g) bidentate hooded hook from anterior abdominal region.

ceous (Fig. 1F); size of these lamellae decreasing slightly towards posterior setigers. Hooded hooks distally bidentate (Fig. 1G). No lateral pouches.

Remarks.—So far, the only species described with crenulate notopodial lateral lamellae is *Magelona pectinata* Nateewathana and Hylleberg, 1991, recorded from Thailand. This species, however, differs from specimens analyzed in this study by the absence of frontal horns, the presence of specialized setae on setiger 9, large lateral pouches usually present between setiger 11–12 and 13–14, the crenulations of the notopodial lateral lamellae

Table 4. *Magelona marianae* new species. Additional material examined.

Number of specimens	Cruise	Locality	Station	Latitude (N)	Longitude (W)	Depth (m)	Sediment	Date
2	CORTES 2	Punta Arboleda	16	26° 53'	110° 03'	22.2	mud with shell	12 March 1985
7	CORTES 2	Fuerte River	52	25° 40'	109° 29'	28.6	silty sand	20 March 1985
1	CORTES 2	Santa María Bay	4	24° 57'	108° 42'	79.0	mud	10 March 1985
38	CORTES 2	Punta Mita	61	20° 54'	105° 28'	46.4	silty sand	23 March 1985
2	CORTES 3	Santa María Bay	3	25° 02'	108° 31'	23.5	fine sand	09 August 1985
1	CORTES 3	Fuerte River	52	25° 44'	109° 29'	22.1	fine sand	08 August 1985

which are located in the superior region, and by the presence of tridentate rather than bidentate hooded hooks.

Etymology.—The species is dedicated to Mariana Gutiérrez González.

Habitat.—In fine sands and silts; D = 22.2–79.0; T = 13.2–16.8; S = 34.92–35.46; OM = 3.0–5.5; OD = 0.80–5.40.

Distribution.—Present in Punta Mita, Nayarit, with occasional specimens collected in southern Sonora and northern Sinaloa.

Magelona tehuanaensis new species

(Fig. 2A–H)

Type Material.—Western Salina Cruz 15°57'N, 95°20'W, sta. 212, 70 m, mud, 01 May 1987 (Cruise MIMAR 3), Holotype (USNM: 186403). Paratypes: 23 incomplete spec.: Salina Cruz 15°55'N, 95°11'W, sta. 199, 101 m, mud, 31 May 1987 (Cruise MIMAR 3), 5 spec. (USNM: 186404); Salina Cruz 15° 55'N, 95°11'W, sta. 199, 101 m, mud, 31 May 1987 (Cruise MIMAR 3), 5 spec. (LACM-AHF POLY 1932); Western Salina Cruz 15°57'N, 95°20'W, sta. 212, 70 m, mud, 01 June 1987 (Cruise MIMAR 3), 5 spec. (BNHM: 1999-1730-1734); Western Salina Cruz 15°57'N, 95° 20'W, sta. 212, 70 m, mud, 01 June 1987 (Cruise MIMAR 3), 3 spec. (AM: W25548); Western Salina Cruz 15°57'N, 95°20'W, sta. 212, 70 m, mud, 01 June 1987 (Cruise MIMAR 3), 5 spec. (CP-ICMyL: POP-10-002).

Additional Material Examined.—66 incomplete spec. (Table 5).

Description.—Holotype with 27 setigers, length 12.3 mm, width 0.48 mm (Fig. 2A). Prostomium oval slightly longer than wide (0.63 × 0.58 mm), well developed frontal horns, anterior margin with 11 crenulations (Fig. 2B), palps lost in all specimens. Color yellowish with oval brown spots in lateral areas of the body, in each setiger from intersegmental region. Thorax 3.1 mm long. Setigers 1 to 8 similar (Fig. 2C–E), dorsal medial lobes digitiform, distally pointed, notopodial lateral lamellae big and foliaceous; ventral neuropodial lobes digitiform, diminishing gradually in size towards posterior end, and neuropodial lateral lamellae short and rounded (Fig. 2E). Ninth thoracic setiger without dorsal medial lobes, notopodial lateral lamellae triangular; neuropodial lateral lamellae short and conical, and a very small ventral neuropodial lobe (Fig. 2F). Thoracic setae limbate. Abdomen with lateral brown spots between parapodia. Anterior abdominal parapodia with noto- and neuropodial lateral lamellae foliaceous, dorsal and ventral medial lobes small (Fig. 2G). Abdominal setae tridentate hooded hooks, all similar in size (Fig. 2H). No lateral pouches.

Remarks.—So far only four species characterized by the presence of crenulations in the anterior margin of the prostomium have been recorded from the Pacific Ocean: *Magelona crenulifrons* Gallardo, 1968, *M. lenticulata* Gallardo, 1968, from Viet Nam, *M. methae* Nateewathana and Hylleberg, 1991, and *M. petersenae* Nateewathana and Hylleberg, 1991 from Thailand. Of these, in *M. methae* and *M. crenulifrons* bidentate hooded hooks are present; in *M. petersenae* tridentate hooks are present, but dorsal medial lobes are absent. Thus, the specimens analyzed are closest to *M. lenticulata*. However, in this species no ventral neuropodial lobes are present in thoracic setigers; there are very small notopodial lateral lamellae and a dorsal medial lobe in the ninth setiger. In addition, the anterior margin of the prostomium is irregularly crenulate. Two species with well developed fron-

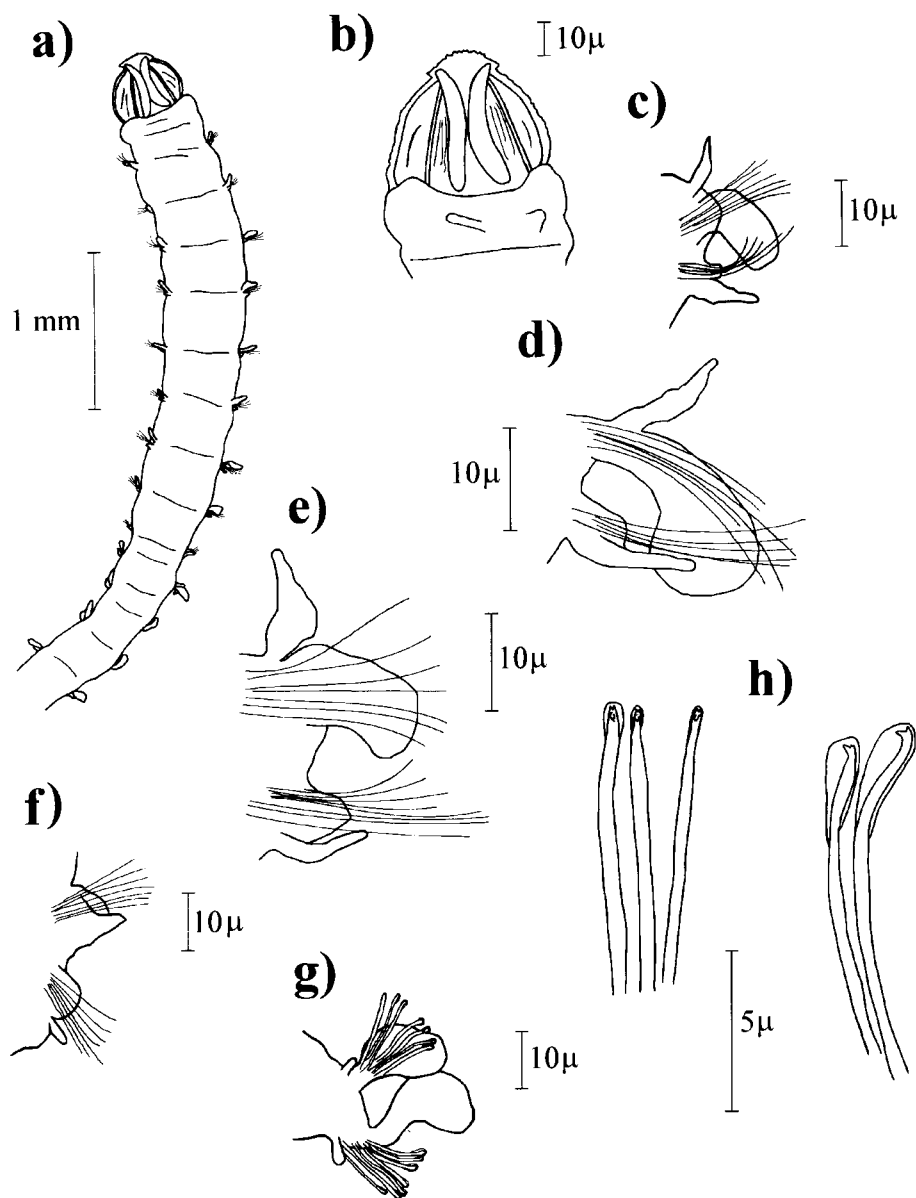


Figure 2. *Magelona tehuanaensis* n. sp.: a) anterior end, dorsal view; b) prostomium, dorsal view; c, d, e, f, g) setigers 1, 4, 8, 9, 12, anterior view; h) tridentate hooded hook from anterior abdominal region, frontal and lateral view.

tal horns and crenulate margins have been described from the Gulf of Mexico, but have not been formally named: they were described as *Magelona* sp. J and *Magelona* sp. L (Uebelacker and Jones, 1984). In the first, either the prostomial crenulations are poorly developed or a smooth margin is present, and there is a dorsal medial lobe in the ninth

Table 5. *Magelona tehuanaensis* new species. Additional material examined.

Number of specimens	Cruise	Locality	Station	Latitude (N)	Longitude (W)	Depth (m)	Sediment	Date
2	CORTES 2	Cabo Tepoca	44	30° 02'	112° 55'	104.0	silty sand	17 March 1985
4	CORTES 2	Fuerte River	52	25° 40'	109° 29'	28.6	silty sand	20 March 1985
1	CORTES 3	Cabo Tepoca	43	30° 12'	112° 52'	66.3	mud	05 August 1985
2	CORTES 3	Cabo Tepoca	44	30° 01'	113° 00'	106.0	mud with shell	05 August 1985
1	CORTES 3	Northern Rocas Consag	39	31° 02'	114° 05'	93.0	mud	04 August 1985
3	CORTES 3	Fuerte River	51	25° 44'	109° 29'	42.0	mud	08 August 1985
1	CORTES 3	Fuerte River	52	25° 44'	109° 29'	22.1	fine sand	08 August 1985
1	CORTES 3	Punta Arboleda	15	26° 53'	110° 06'	39.0	mud with gravel	31 July 1985
1	CORTES 3	Santa María Bay	3	25° 02'	108° 31'	23.5	sand	09 August 1985
1	CORTES 3	Santa María Bay	5	24° 57'	108° 44'	97.0	mud	09 August 1985
4	MIMAR 3	Grande Lagoon	230	15° 52'	095° 40'	94.0	mud	01 June 1987
3	MIMAR 3	Blanca Lagoon	222	15° 53'	095° 30'	94.0	sandy mud	01 June 1987
4	MIMAR 3	Western Salina Cruz	212	15° 57'	095° 20'	70.0	mud	01 June 1987
5	MIMAR 3	Salina Cruz	199	15° 55'	095° 11'	101.0	mud	31 May 1987
33	MIMAR 3	San Mateo del Mar	187	15° 58'	095° 00'	97.0	mud	31 May 1987

setiger. In the latter species a few but highly irregular prostomial crenulations are present, and the dorsal medial lobes are conical or triangular.

Etymology.—The specific name refers to the area of the Gulf of Tehuantepec where it was first collected.

Habitat.—Sandy muds and muds, in the Gulf of Tehuantepec; D = 70–101; T = 19–24; S = 34.64; OM = 1.45–2.15. Silty sands in the Gulf of California; D = 22.1–106.0; T = 14.2–32.0; S = 34.20–35.63; OM = 2.9–8.4; OD = 1.80–5.40.

Distribution.—Coasts of Oaxaca (Gulf of Tehuantepec), and coasts of Sonora and northern Sinaloa (Gulf of California).

Meredithia new genus

Type Species.—*Meredithia spinifera* new species.

Diagnosis.—Body long, slender, divided in thorax (9 setigers) and abdomen (large number of setigers). Prostomium large, spatulate, with well developed frontal horns, anterior margin smooth or slightly crenulate. Long pair of papillose palps. Biramous parapodia with varied shapes in lobes and lateral lamellae. All thoracic setae limbate. Some abdominal setigers with large hooded recurved spines, in addition to uni- or bidentate hooded hooks. Pygidium unknown.

Remarks.—*Meredithia* n. gen. can be differentiated from *Magelona*, by the presence of large hooded recurved spines in some abdominal setigers, which are absent in the more than 50 species known, although Uebelacker and Jones (1984) noted this spine in the unnamed species *Magelona* sp. D and *Magelona* sp. H.

Magelona sp. D is here recognized as *Meredithia spinifera* n. sp. (some of Uebelacker and Jones specimens are designated paratypes of the new species) because of the presence of large hooded recurved spines in setigers 10–17, in addition to uni- and bidentate hooded hooks.

Magelona sp. H herein described as *Meredithia uebelackeri* n. sp., is also included in this genus due to the presence of large hooded recurved spines from setiger 36, in addition to bidentate hooded hooks, the latter being a character that differentiates it from *Meredithia spinifera*.

Jones (1963) and Blake (1996) indicated that the main morphological characters that can be used to differentiate the magelonid species are: (1) presence/absence of frontal horns on the prostomium; (2) relative dimensions of the prostomium; (3) presence/absence of dorsal medial lobes on thoracic notopodia; (4) presence/absence and location of lateral pouches between abdominal segments; (5) modifications of setae of setiger 9; (6) morphology of the abdominal hooded hooks; (7) presence/absence of abdominal medial lobes; and (8) presence/absence and form of interlamellae on abdominal parapodia. The large hooded recurved spines are not considered by them as a diagnostic character, Uebelacker and Jones (1984) indicated that some species have modified hooks, such as large hooded spines in each anterior abdominal ramus (*Magelona* sp. D), or large hooded recurved spines posteriorly (*Magelona* sp. H), and although they mentioned that the morphology of the abdominal hooded hooks is very important at the species level, they did not consider to move this group of species to a new genus. We think that although this character is the only one that differentiates this group from the other species described in this monogeneric group, it is sufficiently distinctive to make it a valid generic level character.

Etymology.—The genus name is dedicated to the late Meredith Jones as a recognition of his dedication to the study of polychaetes, especially for his important contributions to the knowledge of the family Magelonidae.

Meredithia spinifera new species

(Fig. 3A–H)

Magelona sp. D Uebelacker and Jones, 1984: 7.13–7.16, figs. 7.9, 7.10a–h.

Type Material.—Santa María Bay 24°57'N, 108°42'W, sta. 4, 75 m, silty sand, 10 March 1985 (Cruise CORTES 2), Holotype (USNM: 186405). Paratypes 7 incomplete spec.: Santa Inés Bay 27°00'N, 111°50'W, sta. 49A, 100.0 m, fine sand, 19 March 1985 (Cruise CORTES 2), 1 spec. (USNM: 186406); Punta Mita 20°54'N, 105°28'W, sta. 61, 50.4 m, fine sand, 23 March 1985 (Cruise CORTES 2), 1 spec. (USNM: 186407); Punta Arboleda 26°53'N, 110°06'W, sta. 15, 39.0 m, silty sand, 31 July 1985 (Cruise CORTES 3), 1 spec. (CP-ICMyL: POP-10-003); North Atlantic Ocean, Gulf of Mexico, Alabama, off Mobile Bay 29°36'N, 087°27'W, sta. VI-2643, 69 m, September 1975 (OV MAFLA), 1 spec. (USNM - Division of Worms 086729 (voucher), ACC: 332151); North Atlantic Ocean, Gulf of Mexico, Texas, southern Bank 27°26'N, 096°31'W, sta. SB-3, 82 m, December 1976, (OV STOCS), 3 spec. (USNM - Division of Worms 086735 (voucher), ACC: 340739).

Description.—Holotype with 21 setigers, length 10.4 mm, width 0.6 mm. Prostomium truncate with well developed horns (0.75 × 0.63 mm), anterior margins smooth, slightly crenulate in paratypes, a bit longer than wide (Fig. 3A), palps with four rows of papillae. Thorax 3.4 mm long. Parapodia similar in setigers 1–8 (Fig. 3B–D). First setiger with dorsal medial lobes foliaceous (Fig. 3B), reduced gradually in size towards posterior end, but absent in setiger 9 (Fig. 3E); notopodial lateral lamellae large and slightly foliaceous towards the posterior region of the thorax; dorsal medial lobes and neuropodial lobes long and foliaceous, reduced in size towards end of thorax (Figs. 3B–D). Setiger 9 without dorsal medial lobe, notopodial lateral lamellae foliaceous and well developed; neuropodial lobes short and rounded, with ventral neuropodial lobe short and digitiform (Fig. 3E). All thoracic setae limbate. Abdomen with dorso-lateral brown spots present in every abdominal segment. Abdominal parapodia with notopodial and neuropodial lateral lamellae foliaceous, dorsal and ventral medial lobes short and digitiform (Fig. 3F). No lateral pouches. Each abdominal ramus from setiger 10 to 17 with one large hooded recurved spine located close to lateral lamellae, with a smaller hooded spine (Fig. 3G). Small hooks gradually becoming bidentate in setiger 16 (from setiger 15 in some specimens). In paratypes, large hooded spines present from setiger 10 to 16–17, smaller spines from setiger 10 to 15–16. Bidentate hooded hooks from setiger 16 or 17. Acicular spines present down to setiger 17; from setiger 18, slightly slenderer and bidentate. Posterior to setiger 18, only one pair of bidentate hooded hooks present in each ramus (Fig. 3H), although apparently this number can increase towards posterior region, since in one paratype with 24 setigers, four bidentate hooks are present in each ramus of this last segment.

Remarks.—The characteristic feature of this species, the type species of the genus *Meredithia*, is the presence of large hooded recurved spines in anterior abdominal setigers, a unique character, only shared by another species so far unnamed but described by Uebelacker and Jones (1984) as *Magelona* sp. H from the northern Gulf of Mexico, and

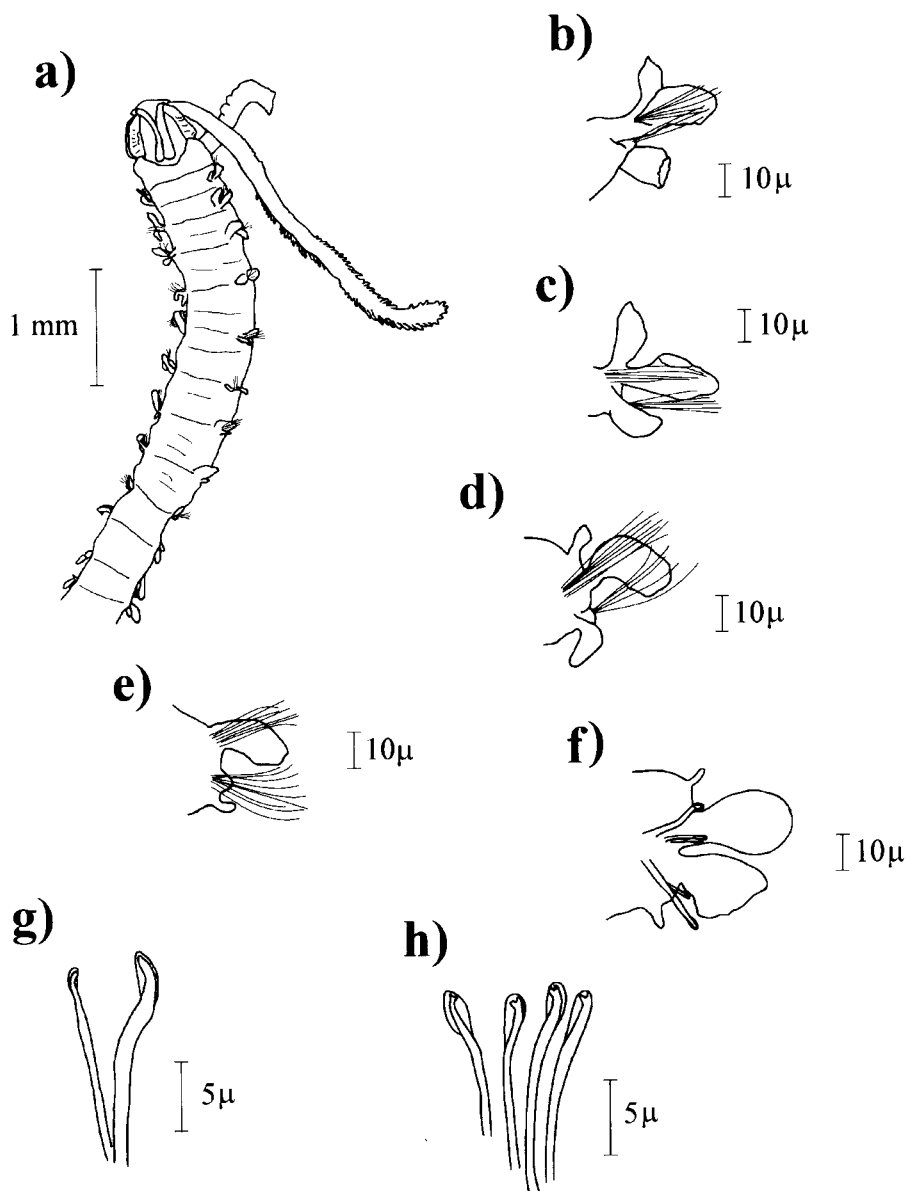


Figure 3. *Meredithia spinifera* n. sp.: a) anterior end, dorsal view; b, c, d, e, f) setigers 1, 4, 8, 9, 12, anterior view; g) large hooded recurved spine and smaller unidentate hooded hook, from anterior abdominal region; h) bidentate hooded hook from median abdominal region.

herein as *Meredithia uebelackerae* n. sp. However, in *M. uebelackerae*, no smaller hooded spines hooks are present, the large hooded spines are distally more recurved and are found in notopodia from setigers 36 on, whereas in *M. spinifera*, they are found from setigers 10 to 17.

Etymology.—The specific name refers to the acicular spines present in the abdominal setigers which distinctly characterize this species.

Habitat.— Fine and silty sands; D = 39.0–100.0; T = 13.2–28.1; S = 34.80–35.15; OM = 3.0–7.2; OD = 0.80–3.83.

Distribution.— Considered Amphiamerican since it has been found both in the Gulf of California (northern region of Sinaloa, and southern Sonora) and in the northern Gulf of Mexico off Mobile Bay, Alabama and Southern Bank, Texas.

***Meredithia uebelackerae* new species**
(Fig. 4A–I)

Magelona sp. H Uebelacker and Jones, 1984: 7.20–7.23, figs. 7.17, 7.18a–j.

Type Material.— North Atlantic Ocean, Gulf of Mexico, Texas 27°49'N, 097°13'W, sta. CC 157, 3 m, Holotype (USNM - Division of Worms 086770 (voucher)).

Description.— Holotype with 43 setigers, length 16.4 mm, width 0.28 mm, with 43 setigers. Prostomium rounded to oval, well developed frontal horns, anterior margin smooth, slightly longer than wide (0.38 × 0.30 mm) (Fig. 4A), palps lost. Thorax 2.33 mm long. Parapodia similar in setigers 1–8 (Fig. 4B–D). Notopodial lateral lamellae narrow and almost flattened in first setiger (Fig. 4B), ventral neuropodial lobe very short. Notopodial lateral lamellae becoming slightly larger towards posterior region of thorax (Fig. 4D); ventral neuropodial lobes digitiform; dorsal medial lobes and neuropodial lateral lamellae absent in thoracic setigers (Fig. 4C–D). Setiger 9 with notopodial lateral lamellae and ventral neuropodial lobes shorter and narrower than in anterior setigers (Fig. 4E). All thoracic setae limbate. Abdomen with notopodial and neuropodial lateral lamellae foliaceous (Fig. 4F), decreasing in size towards posterior end, though relative size between them is maintained; dorsal and ventral medial lobes short and digitiform (Fig. 4F). No lateral pouches. Two groups of bidentate hooded hooks, arranged face to face in each abdominal ramus (Fig. 4F–G), more numerous in posterior region (from 6 to 12); occasionally one smaller bidentate hooded hook present at base of each lateral lamella, those hooks with basal tooth smaller and rounded present (Fig. 4H,I), some appear tridentate (two basal teeth) when hood aperture is located exactly in front of apical tooth. From setiger 36, one or two large hooded recurved spines, located close to lateral lamellae in notopodia, in addition to bidentate hooks (Fig. 4J); only hooded bidentate hooks in neuropodia.

Remarks.— This species is included in the new genus *Meredithia* because of the presence of large hooded recurved spines in some abdominal setigers. See also the remarks in *Meredithia spinifera* n. sp. for a discussion of the differences with other species of the genus.

In addition, 21 specimens from the northern Gulf of Mexico identified as *Magelona* sp. H by Uebelacker and Jones (1984) and deposited as USNM's voucher specimens were analyzed. All are incomplete, 18–30 setigers long. Due to the reduced number of segments present in the material loaned for examination, no large hooded recurved spines could be observed. Apparently, all other morphological characteristics agree with the same species, except for the presence of the characteristic spines, which in the holotype of *Meredithia uebelackerae* appear in setiger 36. Thus if we follow Uebelacker and Jones (1984), the specimens resemble *Magelona phyllisae* Jones, 1963, recorded from the coast off Perú, but in this species only one sized bidentate hooded hooks are present, and the notopodial lateral lamellae are less developed which is why we think they could belong to *Meredithia uebelackerae*.

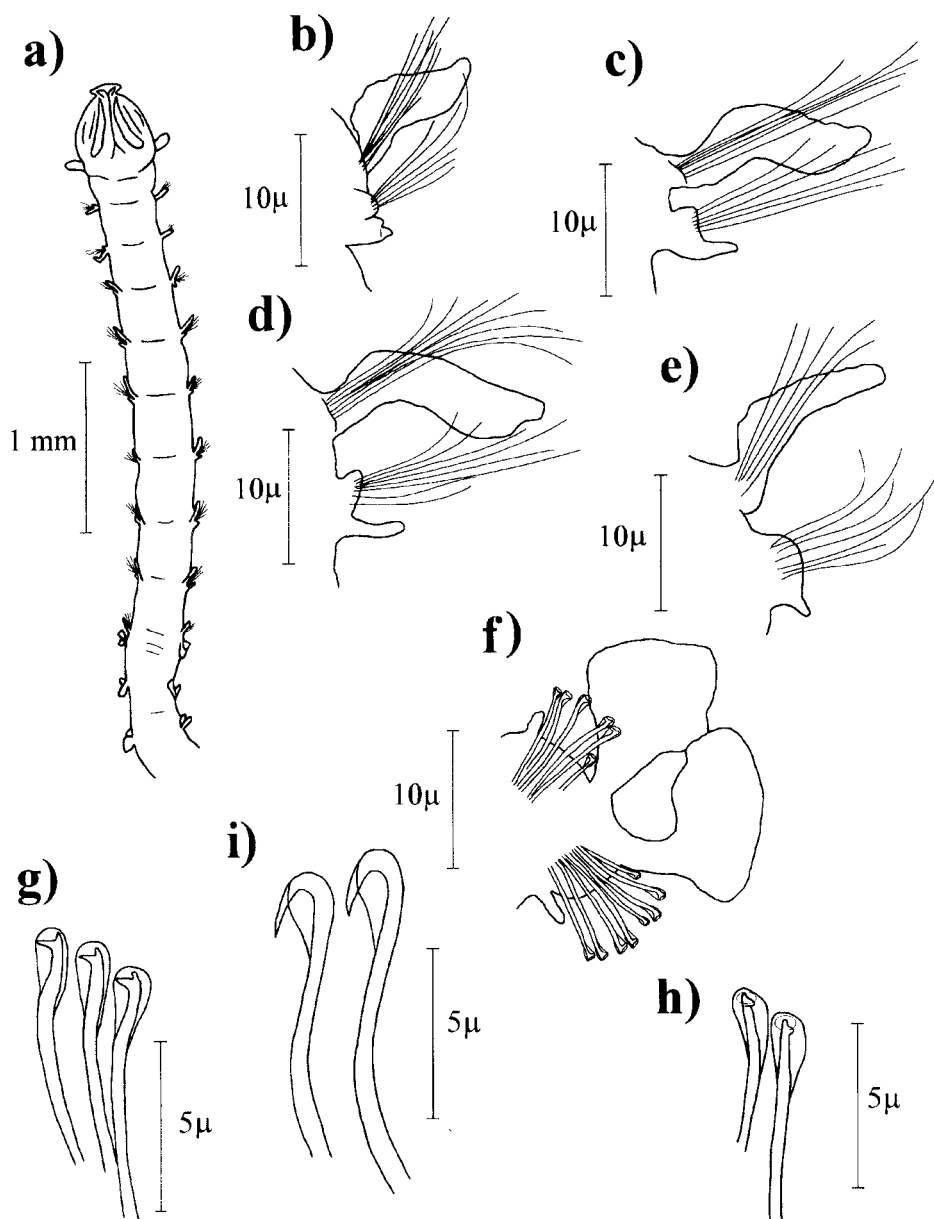


Figure 4. *Meredithia uebelackerae* n. sp.: a) anterior end, dorsal view; b, c, d, e, f) setigers 1, 4, 8, 9, 12, anterior view; g) bidentate hooded hook from median abdominal region; h) slender bidentate hooded hook; i) large hooded recurved spines.

Etymology.—The species is named to honor Joan M. Uebelacker, for her valuable contributions to the study of the polychaetes and especially for being the first to study the specimens herein described.

Habitat.—Silty and muddy sediments (Uebelacker and Jones, 1984), depths 3 to 24 m.

Distribution.—Northern Gulf of Mexico, Texas, Mississippi and North Carolina.

KEY TO THE MAGELONIDS FROM THE MEXICAN PACIFIC AND NORTHERN GULF OF MEXICO

- 1a. Some abdominal setigers with large hooded recurved spines 2
- 1b. Abdominal setigers without large hooded recurved spines 3
- 2a. Setigers 10–17 with a large hooded recurved spine and smaller hooded spines, in addition to bidentate hooded hooks *Meredithia spinifera*
- 2b. Large hooded recurved spines from setigero 36, in addition to bidentate hooded hooks of two different sizes *Meredithia uebelackerae*
- 3a. Prostomium rounded anteriorly, without frontal horns 4
- 3b. Prostomium with frontal horns 5
- 4a. Bidentate hooded hooks present *Magelona californica*
- 4b. Tridentate hooded hooks present *Magelona pitelkai*
- 5a. Notopodial lateral lamellae (postsetal part) from thoracic setigers with distal margin entire .. 6
- 5b. Notopodial lateral lamellae (postsetal part) from thoracic setigers with distal margin crenulate *Magelona marianae*
- 6a. Bidentate hooded hooks present *Magelona pacifica*
- 6b. Tridentate hooded hooks present *Magelona tehuanaensis*

ACKNOWLEDGMENTS

Thanks are due to L. González Ortiz for her help with some of the biological material and data processing, to J. A. de León-González for allowing us to examine and include the specimens and the field data from Petacalco Bay, Guerrero, in this study, to K. Fauchald and L. Ward from the Smithsonian Institution, Washington, D.C., for arranging the loan of material, and especially to Kristian Fauchald for his constant help and encouragement.

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